

CLAIMS

1-25. Canceled.

26. (New) A method for use in a network in which a least a first message for establishing a call is routed from a calling party to a called party through one or more network entities and in which at least one subsequent message for establishing said call is routed between said calling party and said called party through fewer than all of said one or more network entities.

27. (New) The invention of claim 26 wherein at least one of said one or more network entities is a gate controller and wherein said at least one subsequent message is not routed through said gate controller.

28. (New) The invention of claim 26 wherein said first message is a setup message for the call and wherein said at least one subsequent message is an end-to-end message.

29. (New) The invention of claim 26 wherein said first message is a setup message for the call and wherein said at least one subsequent message is one of a ring message, a ringback message and a connect message.

30. (New) The invention of claim 26 wherein said establishing includes a setup phase during which the routing of said first message is carried out and a connection phase during which the routing of said at least one subsequent message is carried out.

31. (New) The invention of claim 26 wherein said at least one subsequent message is routed through a NAT/PAT server.

32. (New) A method for use in a network in which call processing for establishing a call is performed by one or more network entities in response to a first signaling message, and in which at least one subsequent signaling message for establishing said call is routed through fewer than all of said one or more network entities.

33. (New) The invention of claim 32 wherein at least one of said one or more network entities is a gate controller and wherein said at least one subsequent signaling message is not routed through said gate controller.

34. (New) The invention of claim 33 wherein said establishing includes a setup phase during which the routing of said first signaling message is carried out and a connection phase during which the routing of said at least one subsequent signaling message is carried out.

35. (New) The invention of claim 34 wherein said first signaling message is a setup message for the call and wherein said at least one subsequent signaling message is an end-to-end message.

36. (New) The invention of claim 34 wherein said first signaling message is a setup message for the call and wherein said at least one subsequent signaling message is one of a ring message, a ringback message and a connect message.

37. (New) The invention of claim 32 wherein said at least one subsequent signaling message is routed through a NAT/PAT server.

38. (New) A method for use in a network for establishing a call between a calling party and a called party, the method comprising routing at least first and second call-establishing messages between the calling party and the called party, the first call-establishing message being routed through one or more network entities and the second

call-establishing message being routed through fewer than all of said one or more network entities.

39. (New) The invention of claim 38 wherein said method includes a setup phase during which the routing of said first call-establishing message is carried out and a connection phase during which the routing of said second call-establishing message is carried out.

40. (New) The invention of claim 39 wherein said first call-establishing message is a setup message for the call and wherein said second call-establishing message is an end-to-end message.

41. (New) The invention of claim 40 wherein at least one of said one or more network entities is a gate controller and wherein said second call-establishing message is not routed through said gate controller.

42. (New) The invention of claim 39 wherein said first call-establishing message is a setup message for the call and wherein said second call-establishing message is one of a ring message, a ringback message and a connect message.

43. (New) The invention of claim 42 wherein at least one of said one or more network entities is a gate controller and wherein said second call-establishing message is not routed through said gate controller.

44. (New) The invention of claim 38 wherein said second call-establishing message is routed through a NAT/PAT server.

45. (New) A method for use in a network to establish a call from a calling party to a called party, the method comprising

communicating to the called party a setup message for the call that originated from the calling party, said call setup message being processed by one or more network entities of said network;

subsequently communicating to the calling party a setup acknowledgement message from the called party to the calling party, the setup acknowledgement message being processed by each of said one or more network entities; and

subsequently communicating between the calling and called parties at least one signaling message, said at least one signaling message being routed through fewer than all of said one or more network entities.

46. (New) The invention of claim 45 wherein at least one of said one or more network entities is a gate controller and wherein said at least one signaling message is not routed through said gate controller.

47. (New) The invention of claim 45 wherein said at least one signaling message is an end-to-end message.

48. (New) The invention of claim 46 wherein said at least one signaling message is one of a ring message, a ringback message and a connect message.

49. (New) The invention of claim 45 wherein said at least one signaling message is routed through a NAT/PAT server.

50. (New) A method for establishing a call in a network, said network including at least one network entity, the method comprising
forwarding to a called party a setup message for the call that originated from a calling party;
receiving a setup acknowledgement message from the called party, said at least one entity processing at least one of said call setup message and said setup acknowledgement message in order to establish state information for said call;

forwarding the received setup acknowledgement message to the calling party;
and
routing end-to-end signaling messages between said calling party and said called party without said end-to-end message being routed through said at least one network entity.

51. (New) The invention of claim 50 wherein said end-to-end signaling messages include at least one of a ring message, a ringback message and a connect message.

52. (New) The invention of claim 50 wherein said routing is carried out only if the network received a reserve message from at least one of the called party and the calling party.

53. (New) The invention of claim 50 wherein said end-to-end signaling messages are opaque to any entities in said network that perform said routing.

54. (New) The invention of claim 53 wherein at least one of said entities in said network that performs said routing performs network address translation.

55. (New) The invention of claim 50 wherein said one entity is a gate controller.

56. (New) A method for establishing a call between a calling party and a called party, the method comprising
routing call-establishment signaling messages between said calling party and said called party through one or more network entities in a first signaling phase, and
routing call-establishment signaling messages between said calling party and said called party through fewer than said one or more network entities in a second signaling phase.

57. (New) The invention of claim 56 wherein the first signaling phase is a call setup phase and the second signaling phase is a call connection phase.

58. (New) The invention of claim 57 wherein the call-establishment signaling messages routed in said first signaling phase include at least a setup message for the call and a call setup acknowledgement message, and wherein the call-establishment signaling messages routed in said second signaling phase include at least one of a ring message, a ringback message and a connect message.

59. (New) The invention of claim 56 wherein the call-establishment signaling messages routed in said second signaling phase are opaque to any entities that route those messages.

60. (New) The invention of claim 59 wherein at least one of said entities performs network address translation.

61. (New) A method for routing signaling messages through a network to establish a call, the method comprising
routing initial signaling messages during a first signaling phase, and
routing subsequent signaling messages during a second signaling phase,
wherein the initial signaling messages are routed through one or more network entities and the subsequent signaling messages are routed through fewer than all of said one or more network entities.

62. (New) The invention of claim 61 wherein the first signaling phase is a call setup phase and the second signaling phase is a call connection phase.

63. (New) The invention of claim 61 wherein the initial signaling messages include at least a setup message for the call and a call setup acknowledgement message

and wherein the subsequent signaling messages include at least one of a ring message, a ringback message and a connect message.

64. (New) The invention of claim 61 wherein said one or more network entities includes at least one gate controller.

65. (New) A method for exchanging signaling messages for a call between a calling party and a called party, comprising
exchanging a setup message for the call through at least one gate controller, and
exchanging an end-to-end message for the call without the end-to-end message being routed through the at least one gate controller.

66. (New) The method of claim 65, wherein the end-to-end message is a ring message sent from the calling party to the called party without being sent through a gate controller.

67. (New) The method of claim 65, wherein the end-to-end message is a ringback message sent from the called party to the calling party without being sent through a gate controller.

68. (New) The method of claim 65, wherein the end-to-end message is a connect message sent from the called party to the calling party without being sent through a gate controller, the connect message being sent when the called party indicates an acceptance for the call.

69. (New) The method of claim 65, wherein the end-to-end message is routed through a network edge device, the network edge device being associated with the calling party and connecting a first network to a second network, the calling party being associated with the first network, the gate controller being connected to the second network.

70. (New) The method of claim 65, wherein the end-to-end message is routed through a network edge device, the network edge device being associated with the called party and connecting a first network to a second network, the called party being associated with the first network, the gate controller being connected to the second network.

71. (New) The method of claim 65, wherein:
the end-to-end message is routed through a first network edge device, the network edge device being associated with the calling party and connecting a first network to a second network, the calling party being associated with the first network, the gate controller being connected to the second network, and
the end-to-end message is routed through a second network edge device, the second network edge device being associated with the called party and connecting a third network to the second network, the called party being associated with the third network.

72. (New) A method for exchanging messages for a call between a calling party and a called party, comprising
sending a setup message having a destination address from the calling party to a gate controller;
receiving a setup acknowledgment message from the called party; and
enabling the exchange of end-to-end messages between the calling party and the called party if at least one from the group of the calling party and the called party sent a reserve message to an associated network edge device.

73. (New) The method of claim 72 wherein the end-to-end message is a ring message sent from the calling party to the called party without being sent through the gate controller.

74. (New) The method of claim 72 wherein the end-to-end message is a ringback message sent from the called party to the calling party without being sent through the gate controller.

75. (New) The method of claim 72 wherein the end-to-end message is a connect message sent from the called party to the calling party without being sent through the gate controller, the connect message being sent when the called party indicates an acceptance for the call.

76. (New) The method of claim 72 wherein a network edge device associated with the calling party connects a first network to a second network, the calling party being associated with the first network, the gate controller being connected to the second network.

77. (New) The method of claim 72 wherein a network edge device associated with the called party connects a first network to a second network, the called party being associated with the first network, the gate controller being connected to the second network.

78. (New) The method of claim 72 wherein:
the network edge device associated with the calling party connects a first network to a second network, the calling party being associated with the first network, the gate controller being connected to the second network, and
the network edge device associated with the called party connects the second network to a third network, the called party being associated with the third network.

79. (New) A method for use by a processing entity in a network to establish a call, the method comprising
forwarding to a called party a setup message for the call that originated from a calling party;

receiving a setup acknowledgement message from the called party, said processing entity processing at least one of said call setup message and said setup acknowledgement message in order to establish state information for said call;
forwarding the received setup acknowledgement message to the calling party;
and
enabling end-to-end signaling messages to be exchanged between said calling party and said called party without said processing entity receiving said end-to-end messages.

80. (New) The invention of claim 79 wherein said end-to-end signaling messages include at least one of a ring message, a ringback message and a connect message.

81. (New) The invention of claim 79 wherein said processing entity is a gate controller.

82. (New) The invention of claim 79 wherein said enabling is carried out if the network received a reserve message from at least one of the called party and the calling party.

83. (New) A method for use by a calling party to establish a call between said calling party and a called party, the method comprising:

sending a setup message for the call to the called party through at least one gate controller;

receiving a response to said setup message from the called party; and

sending at least one end-to-end message for the call to the called party, said at least one end-to-end message being addressed in such a way that said at least one end-to-end message is not routed through the at least one gate controller.

84. (New) The invention of claim 83 wherein said at least one end-to-end message is one of a ring message, a ringback message and a connect message.

85. (New) The invention of claim 83 wherein said call is established through a network and wherein said at least one end-to-end message is opaque to entities of said network through which said at least one end-to-end message is sent.

86. (New) The invention of claim 83 wherein said setup message includes a destination address for the called party and wherein said at least one end-to-end message includes a different address for the called party.

87. (New) The invention of claim 83 wherein said setup message includes a destination address for the called party in a first address space and said at least one end-to-end message includes an address for the called party in a second address space.

88. (New) The invention of claim 87 wherein said at least one end-to-end message is one of a ring message, a ringback message and a connect message.

89. (New) The invention of claim 87 wherein said first address space is one of E164, a source string from a previous call, and a generic network service address space.

90. (New) The invention of claim 89 wherein said second address space is an IP address space.

91. (New) A method for use by a calling party to establish a call between said calling party and a called party in a network, comprising:

sending a first signaling message to the called party through at least one entity of said network;

receiving a second signaling message in response to said first signaling message from the called party through the at least one entity; and

sending at least one subsequent signaling message to the called party through said network after receiving the second signaling message, said at least one subsequent signaling message being addressed in such a way that said at least one subsequent signaling message is not routed through the at least one entity.

92. (New) The invention of claim 91 wherein said first signaling message is a setup message for the call, said second signaling message is a call setup acknowledgement message, and said at least one subsequent signaling message is an end-to-end message.

93. (New) The invention of claim 92 wherein said end-to-end message is one of a ring message, a ringback message and a connect message.

94. (New) The invention of claim 93 wherein said call is established through a network and wherein said at least one end-to-end message is opaque to entities of said network through which said at least one end-to-end message is sent.

95. (New) The invention of claim 92 wherein said call setup message includes a destination address for the called party and wherein said end-to-end message includes a different address for the called party.

96. (New) The invention of claim 92 wherein said call setup message includes a destination address for the called party in a first address space and said end-to-end message includes an address for the called party in a second address space.

97. (New) The invention of claim 96 wherein said first address space is one of E164, a source string from a previous call, and a generic network service address space.

98. (New) The invention of claim 97 wherein said end-to-end message is one of a ring message, a ringback message and a connect message.

99. (New) The invention of claim 97 wherein said second address space is an IP address space.

100. (New) A method for use by a called party in response to receipt of a setup message for a call from a calling party through at least one gate controller, the method comprising

 sending a response to said setup message from the calling party through said gate controller; and

 sending at least one end-to-end message for the call to the calling party, said at least one end-to-end message being addressed in such a way that said at least one end-to-end message is not routed through the at least one gate controller.

101. (New) The invention of claim 100 wherein said end-to-end message is one of a ring message, a ringback message and a connect message.

102. (New) The invention of claim 100 wherein said call is established through a network and wherein said at least one end-to-end message is opaque to entities of said network through which said at least one end-to-end message is sent.

103. (New) The invention of claim 100 wherein said call setup message includes a destination address for the called party and wherein said response includes a different address to which any end-to-end messages from the calling party to the calling party should be sent.

104. (New) The invention of claim 100 further comprising receiving from said calling party an end-to-end message that includes an address that is used by said called party in addressing said end-to-end message sent by said called party.

105. (New) The invention of claim 103 wherein said destination address is in a first address space and wherein said different address is in a second address space.

106. (New) The invention of claim 105 wherein said first address space is one of E164, a source string from a previous call, and a generic network service address space.

107. (New) The invention of claim 106 wherein said end-to-end message is one of a ring message, a ringback message and a connect message.

108. (New) The invention of claim 106 wherein said second address space is an IP address space.